

CLAIMS

1. A device for controlling variable speed electric motors, particularly for hand held power tools and other miniaturised electrically powered apparatuses, comprising an electronic driver unit (5) connectable to the terminals (2, 3) of an electric power source for supplying electric current to at least one electric motor (M) and an optical switch device (7) for triggering said electronic driver unit (5), said optical switch device (7) comprising light emitting means (8) and light transducer means (9) for detecting and converting light into an electric variable signal, said light transducer means (9) being operatively connected to said electronic driver unit (5) for controlling said at least one electric motor (M), wherein said light emitter means (8) comprise at least one white light, high brightness LED (D₁, D₂) connected in parallel to the electric power line terminals (2, 3) by means of a miniaturised power circuit.
2. Device as claimed in claim 1, characterised in that said miniaturised power circuit comprises a capacitive phase displacement power supply (C, R₂) when said electric motor is an AC motor.
3. Device as claimed in claim 2, characterised in that said capacitive phase displacement power supply comprises at least one capacitor (C) and an input resistor (R₂) adapted to supply said LEDs (D₁, D₂) with a threshold voltage.
4. Device as claimed in claim 1, characterised in that said miniaturised power circuit comprises one resistor (R₂) when said at least one electric motor (M) is a DC motor.
5. Device as claimed in claim 1, characterised in that it further comprises a main power switch (4) serially connected to one terminal (2) of the electric power source (V).
6. Device as claimed in claim 1, characterised in that said at least one LED

comprise a pair of miniaturized LEDs (D1, D2) of the surface mounting device (SMD) type.

7. Device as claimed in claim 1, characterised in that said light transducer
5 means (9) is a photo resistor.

8. Device as claimed in claim 7, characterised in that said optical switch
device further comprises at least one movable shield (10) operatively connected to
a manually operable trigger.

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9. Device as claimed in claim 8, characterised in that at least one movable
shield (10) is interposed between said LEDs (D1, D2) and said photo resistor (9).

10. Device as claimed in claim 2, characterised in that said electronic driver
15 unit (5) comprises at least one transistor device (11) connected in parallel to a
charge switch (12).

11. Device as claimed in claim 10, characterised in that said at least one
transistor device (11) is a thyristor (TRIAC).

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12. Device as claimed in claim 4, characterised in that said electronic driver
unit (5) comprises at least one MOSFET control circuit (11) connected in parallel
to a charge switch (12).

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